

the market itself as their station.—A correspondent of the *Post* has suggested that at night, or during fogs, when signals are not visible, the signal man should reply to the whistle of the engine by some sound—a large bell, for instance, giving thereby an assurance that all is right.—The savans of the French Academy are busying themselves with railways. M. Laborde proposes an electric telegraph, which is to tell its signals by sounds. M. Ruau has a plan to substitute horse power for steam in locomotives.—The immediate effect of the opening of the railway to Guildford has been to reduce the price of coals 10s. per ton—an effect which has had a sensible influence in smoothing away the prejudices with which the advent of the railway was regarded. Three months ago there were three coaches between Guildford and London daily. There are now trains ten times in the day.—Perhaps the most startling project in modern times, is the attempt to establish a *Great European Railway Company*, whose object is to supply railway accommodation to a population of only 236,000,000 of human beings. From their prospectus now before us, we learn that the portion of the earth comprehended in their title, covers an extent of only 3,700,000 English square miles. The capital required is modestly set down at 1,000,000l.—The committee of the directors of the Polytechnic Institution have procured the model of a novel invention recently brought from the United States; the object of which is to enable trains to ascend acclivities or steep gradients on railroads. It has an Archimedeian screw between the axles of the carriage, when comes in contact, when required, with a series of friction rollers, placed between the rails; and by means of this contrivance the carriage and train attached to it are forced up the incline. The apparatus is brought into action without delay or stoppage, and the model mounts a gradient of about 1 inch in 6. Two gentlemen claim the merit and the patent-right of the invention, the one is Mr. Coleman from America, whose model we have just described; the other is Mr. Templeton, who we understand obtained letters patent for this and other improvements in railway propulsion some time previous to those of Mr. Coleman.—Messrs. Raiton and Son, of Manchester, in their circular, make the following remarks on the prevalent rage among gentlemen of the present day for becoming railway directors in as many companies as possible. "From amongst many who eminently figure as aspirants for railway fame, we may quote a gentleman lauded in the *Hampshire Independent* as the railway viceroy, and who certainly seems as worthy of extensive fame as any literary or scientific D.D., M.D., or F.R.S.; and, if abbreviated titles of honour mean anything, this gentleman is entitled to the following appendages to his name, as signifying the relation in which he stands to diverse railway interests:—*..... Esq., T.V.M. and G.J.; D.C. of the M.B.M. and M.; D. of T.V.; W.L. or L.S. and P.; D.C. of L. of W.; M. and S.; M. and W.; L. and B.; P. and W.E. and D.J.; W.M.; Y. and C.; and D. and W., and L.; B.S. and B.; C.J.; F.P. and W.J.* 'Tis not every mortal that is gifted with the attribute of ubiquity. Ha! more than mortal!"—The surveys connected with the London and Windsor railway are nearly completed. We understand the line decided upon is through Knightsbridge, Kensington, Hammersmith, Turnham-green, Brentford, Hounslow, Redford, Staines, to Windsor, by a tunnel under the Long Walk, with an alternative line from Staines to pass by Datchet, and enter Windsor by a bridge at Black Potts.—The following is the course determined upon for the Richmond railway. The terminus will be in the Broadway, Richmond. The line will then run nearly parallel with the Richmond-road, as far as East Sheen, leaving Kew a mile and a half distant on the left. It will afterwards cross Barnes-common, having a station as near to the high road leading to Hammersmith-bridge as convenient, and running alongside the Upper Richmond-road, will cross Putney High-street by a cutting of from 12 to 18 feet in depth, over which a bridge will be thrown, to continue the old thoroughfare. This cutting will be continued to North-fields, Wandsworth, where a viaduct will be commenced, and carried across the road leading from Wandsworth to Putney,

through a row of houses called Point-pleasant, across some marshy land to an extensive water bed. Here the excavation will have to be carried 18 feet deep before a foundation can be obtained for the viaduct, and in consequence of the tides overflowing this part, it will be the most difficult undertaking on the whole line. Continuing the viaduct, a double-arched bridge will cross the Wandle, after which the works, meeting with little engineering difficulty, will be continued to their termination at Fulcon-bridge, Battersea, where men are already at work. There will be stations at Putney and Wandsworth, and it is expected that the whole line will be opened on the 1st of May next.

CHURCHES AND CHAPELS, UNDER METROPOLITAN BUILDINGS ACT.

THE following application and certificate were to show the requirements of the official referees on this subject, and may enable other parties so to arrange their drawings and statements when applying as to prevent delay. Messrs. Locke and Nesham being about to build Trinity Church, in Wentlock Barn, City-road, submitted the drawings to the referees, and asked for their certificate.

In reply to the application, the following letter, from the registrar, was received by them:—

"GENTLEMEN,—With respect to the proposed Church at Hoxton, I beg, on the part of the official referees and myself, to inform you that it appears to the official referees upon careful consideration of your drawings, that the spread of the concrete under the footings of the tower is too much restricted, and that you have not indicated in detail the mode of springing the walls of the tower from the inverted arch, or of abutting them against that arch; the mode of tying in the sides of the spire has not been indicated, and the northern buttresses of the tower are not shown upon the plan as to be built from the foundations with the walls in the same manner as the other buttresses. It also appears, that timber plates are intended to be inserted into the walls of the tower, which the official referees consider objectionable, and in opposition to the rule in schedule D, part 2. It is also to be observed, with reference to the roof of the nave, that no efficient means appear to be provided for preventing the roof from spreading; and with reference to a gallery indicated on the plan, that none of the drawings submitted shew the manner in which it is proposed to be constructed. Under these circumstances the official referees request that you will be so good as to state whether you would prefer to supply the deficient information before they proceed to certify, that any conditions upon the points alluded to may be avoided in the certificate, or that the certificate should be prepared with such conditions as the official referees may deem necessary to secure sufficient strength in the construction throughout."

The builders stated that the architect preferred the official referees should add their requirements to the certificate, rather than that the drawings should be withdrawn and altered.

They further gave the following replies:—"With regard to the detailed mode of springing walls of tower from inverted arch, that the inverted arch would be made nearly a semi-arch. The intersection being in the middle of the wall.

The sides of spire would be tied in by a strong chain bond—stone and iron. The northern buttresses would be made to project above the body of the church and not built from foundations.

The timber plates the architect will omit and carry on stone or iron corbels.

The architect considers the roof of nave not likely to spread, especially as the roof of the side aisle abuts against it.

With regard to the concrete for the tower and body of church, the architect would leave it to your discretion to award as much beyond what is shown as you please. We herewith send you additional drawings shewing the gallery."

The following is the certificate:—

"With regard to a certain church proposed to be built in Wentlock Barn, City-road, Hoxton, in the parish of St. Leonard, Shoreditch, in the county of Middlesex, and in the district of St. Leonard, Shoreditch, within the

limits of the Metropolitan Buildings Act, 7 & 8 Vict. cap. 81.

Whereas the Official Referees of Metropolitan Buildings, duly appointed in pursuance of the said Act, have received and duly considered certain particulars and drawings of the said church, submitted to them by Messrs. Locke and Nesham, builders, of Thenbald's-road, London, copies of parts of which drawings, representing the foundations, walls, roof, and other constructions, are hereto annexed, and marked respectively A, B, and C.

Now the said official referees do hereby certify that (it being understood that no excavations for graves or otherwise are to be made at any time within the said proposed building, or within ten feet of the footings on the outside thereof,) the heights, thicknesses, and dimensions, shown in the said annexed drawings, are approved by them, except in as far as the same may be inconsistent with the following conditions, and that the works may proceed in conformity with the said conditions and with the said drawings as modified thereby, subject, as to the soundness and sufficiency of the foundations, and of the work in every part thereof, and as to its accessories and stairs, and in every other respect, to the provisions, rules, and directions of the Metropolitan Buildings Act, and to such supervision and special supervision as are therein prescribed in that behalf.

And the said official referees do hereby determine and declare that the said church is to be deemed to be a building of the extra first-rate of the third class within the meaning of the said Act.—Dated this 16th day of August, 1845.

Conditions referred to in the foregoing certificate.

That the concrete foundations of the tower extend at the outer sides at the top 6 inches beyond the toes of the footings, and at the base 6 inches more for every foot beyond the first foot that such concrete foundations may be in depth.

That the walls of the tower be built of regularly coursed and bonded brickwork or masonry over the concrete bed, throughout the spandrels of the proposed inverted arches as well as above the springings upon those arches.

That the two buttresses on the north side of tower be built up from the foundations, coursed and bonded with the walls in such manner that no part of the superstructure shall overhang the substructure thereof.

That the sides of the tower at the springing of the spire be efficiently tied.

That no timber as bond or as plates be laid into any wall upon the face of a wall, and that all beams, girders, joists, or other bearing timbers requiring a bearing upon any wall, rest upon a stone template of not less length than twice the thickness of the timber to be borne.

That the bearings of the breastsummer beams of the gallery do not exceed 10 feet, unless their scantlings be increased to justify longer bearings.

That some more efficient means be applied than the drawings indicate of preventing the roof over the nave of the church from spreading."

VENTILATION.—Amongst the new systems of ventilation is the plan proposed by Mr. Wroughton, which consists of a mercurial valve acting upon a spring, and opening a portion of a window in such a way that the room will always remain at the temperature desired, and the foul air be replaced at every instant by a supply of pure air from without. Mr. Wroughton's plan is indeed but an extension of the principle of the mercurial self-acting valve of Dr. Arnott's stove; but the application of it to the purposes of ventilation is new.

EXHIBITION AT THE ROYAL INSTITUTION, MANCHESTER.—The exhibition of paintings this year is universally admitted, says the *Manchester Guardian*, to be the best we have ever had. The number of pictures already sold is eighty-three, and the aggregate amount received for them is greater than the total amount of sales last year, including even the thirty-six pictures taken by the holders of prizes in the Art-Union. The exhibition is to be opened in the evening at a lower rate than at present on and after the 29th instant.